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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,460	09/10/2004	Lorne A Whitehead	22-69459-01/RJP	6763

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EXAMINER

MAHONEY, CHRISTOPHER E

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/507,460

Applicant(s)

WHITEHEAD ET AL.

Examiner

Christopher E. Mahoney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-52 54-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11, 15-24, 26-38, 40-52, 54 and 55 is/are rejected.
- 7) ☐ Claim(s) 7-10, 12-14, 25 and 39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/10/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>Nov04 Dec04 Feb06 May06</u>                                   | 6) <input type="checkbox"/> Other: ____                           |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 4 is objected to because of the following informalities: The preliminary amendment filed September 10, 2004 appears to have been intended to change the dependency of claim 4 so as to depend on claim 3 instead of itself. Claim 4 is still recited within the claim language of claim 4. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 18, 23-24, 26-31, 36-37, 40, 49-50, and 54-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Hunter (U.S. Pat. No. 5,359,345). Hunter teaches a display comprising: a light source 30 comprising a two-dimensional array 25 of light-emitting elements 32-34 each having a controllable light output and a spatial light modulator 60 comprising a plurality of controllable elements 62 located to modulate light from the light source. The spatial light modulator has more controllable elements 80, 90 than the light source has light emitting elements. A diffuser 120 is located intermediate the light source and the modulator. The applicant is directed to review figure 1 as well as col. 3, line 59 to col. 4, line 63.

Claims 1-3, 6, 27-28, 31-37, 40-46, 49-50 and 54-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoelen (U.S. Pub. No. 20010035853). Hoelen teaches a display

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comprising: a light source comprising a two-dimensional array of light-emitting elements 16-16" each having a controllable light output and a spatial light modulator 2 comprising a plurality of controllable elements 3 located to modulate light from the light source.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (U.S. Pat. No. 5,359,345). Hunter teaches the salient features of the claimed invention except for ratio of light sources to controllable elements being 1:8 or more or 1:145 or less. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a ratio of between 1:8-145 for the purpose of utilizing an optimum range. The applicant should note that it has been held that where the general working conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoelen (U.S. Pub. No. 20010035853). Hoelen teaches the salient features of the claimed invention except for ratio of light sources to controllable elements being 1:8 or more or 1:145 or less. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a ratio of between 1:8-145 for the purpose of utilizing an optimum range. The applicant should note

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that it has been held that where the general working conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (U.S. Pat. No. 5,359,345). Hunter teaches the salient features of the claimed invention except for ratio of light being 1000:1. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a ratio of between 1000:1 for the purpose of utilizing an optimum range. The applicant should note that it has been held that where the general working conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoelen (U.S. Pub. No. 20010035853). Hoelen teaches the salient features of the claimed invention except for ratio of light being 1000:1. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a ratio of between 1000:1 for the purpose of utilizing an optimum range. The applicant should note that it has been held that where the general working conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoelen (U.S. Pub. No. 20010035853). Hoelen teaches the salient features of the claimed invention except for a thickness of 10cm or less. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a thickness of 10cm or less for the purpose of compactness. The applicant should note that it has been held that where the general working

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conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233

Claims 11, 15-17, 20, 47, and 51-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (U.S. Pat. No. 5,359,345) in view of Childers (U.S. Pat. No. 6,817,717) or Whitehead (U.S. Pat. No. 6,891,672). Hunter teaches the salient features of the claimed invention except for the second spatial light modulator. Both Hunter and Whitehead teach additional SLMs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features taught by Childers or Whitehead for the purpose of enhanced imagery and reduced color artifacts.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (U.S. Pat. No. 5,359,345) in view of Jones (U.S. Pat. No. 5,075,789). Hunter teaches the salient features of the claimed invention except for a front projection type display. Jones teaches that it was known to create either a rear or a front projection type display. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features taught by Jones for the purpose of increasing the market/target audience.

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (U.S. Pat. No. 5,359,345) in view of Yoshida (U.S. Pat. No. 6,644,832). Hunter teaches the salient features of the claimed invention except for a hexagonal array. Yoshida teaches in figure 156B that it was known to use a hexagonal array. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features taught by Yoshida for the purpose of reducing moiré.

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Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoelen (U.S. Pub. No. 20010035853) in view of Yoshida (U.S. Pat. No. 6,644,832). Hoelen teaches the salient features of the claimed invention except for a hexagonal array. Yoshida teaches in figure 156B that it was known to use a hexagonal array. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features taught by Yoshida for the purpose of reducing moiré.

#### ***Allowable Subject Matter***

Claims 7-10 12-14, 25 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher E. Mahoney whose telephone number is (571) 272-2122. The examiner can normally be reached on 8:30AM-5PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'C. E. Mahoney', is positioned above the printed name.

Christopher E Mahoney  
Primary Examiner  
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